

February 17, 2011

Ms. Adrienne Graham
4533 Oxbow Drive
Sacramento, CA 95864

**RE: BALTIMORE RAVINE SPECIFIC PLAN: TRAFFIC VOLUME FORECASTS
FOR SITE ACCESS ALTERNATIVES # 4 AND #5.**

Dear Ms. Graham:

The Auburn City Council has requested evaluation of two alternatives for Access to Baltimore Ravine Specific Plan area. These alternatives link the plan area with two possible locations on Auburn Folsom Road north of the Herdal Drive intersection (Attachment 1). While you have assembled information describing the physical characteristics of each route, you have asked for my opinion as the share of the Baltimore Ravine Specific Plan's traffic that might use each route if these new roads were developed in addition to the Herdal Drive access.

Summary Conclusion

Under the original DEIR traffic analysis, when the BRSP is fully built out, Herdal Drive was projected to carry 79.2% of the external p.m. peak hour traffic generated by the Specific Plan.

If the Alt # 4 route to Pacific Street is added, this new route would be expected to attract 9% to 10% of the total site traffic, with the share on Herdal Drive dropping to a little less than 70%.

However, if the Alternative #5 route is added instead, it would attract roughly 3% of the total site traffic, and Herdal Drive would carry roughly 76%.

Analysis Methodology Results and Conclusions

We considered the following factors to answer your questions:

1. What share of BRSP's trips could be candidate for use of these roads?
2. How does the travel time on these routes compare to each other and to the Herdal Drive route

BRSP Traffic Distribution. The BRSP EIR traffic study identified the amount of traffic that would leave the site and have origin / destination to the north, south, east and west. Information in DEIR figure 5.11-6b, 13 and 14 (attached) was used to create these estimates. In general, the

Werner Road route to Ophir Road could be used for trips to the west via I-80, Auburn Folsom Road south of site would be used to reach I-80 via Indian Hill Road or as a route to Granite Bay. Trips to the east would use Sacramento Street, Maidu Street or other City collectors. Trips to the north towards Interstate 80 (east), SR 49 or the balance of the Auburn area would use Ophir Road and Auburn Folsom Road.

It is the northerly and easterly trips that would be candidates for the new routes. However, as shown in Table 1, only about 30% of the total site traffic falls into this category, and roughly 70% of the site traffic is headed in a direction that would not consider using the new routes at all.

TABLE 1 BRSP REGIONAL TRIP DISTRIBUTION				
Direction	Route Used in Original Study	Share of Total External PM Traffic		Candidate for New Routes?
		Trip Ends	Share of Total	
West to I-80(w)	Herdal Dr to Auburn-Folsom Rd	205	19.3%	No
	Werner Rd to Ophir Rd	115	10.9%	No
South to Granite Bay	Herdal Dr to Auburn Folsom Rd	60	5.7%	No
East on Maidu Drive	Herdal Dr to Auburn Folsom Rd	255	24.0%	No
East on Sacramento Street	Herdal Dr to Auburn Folsom Rd	175	16.5%	Yes
North to I-80 (e), SR 49 and Auburn	Werner Rd to Ophir Rd	105	9.9%	No
	Herdal Dr to Auburn Folsom	145	13.7%	Yes
	Total	1,060	100.0%	30.2%

Characteristics of Each Route. Table 2 compares the two new routes to Auburn Folsom Road with the original route using Herdal Drive. Each route from the beginning of the two alternative routes within the BRSP to a point just north of the Pacific Street intersection on Auburn Folsom Road has been divided into segments where the length, maximum grades and minimum curve radii have been identified. We then identified a probable travel speed on each route.

As shown, the total travel time on each route also includes the average delay expected at the signalized intersections providing access to Auburn Folsom Road. In the case of the Auburn Folsom / Herdal Drive intersection we have assumed the p.m. peak hour delay identified in DEIR Table 5.11-30 for mitigated "Existing Plus Project" Conditions. Because traffic count data is not available for the Auburn Folsom Road / Pacific Street intersection, the average delay experienced at this intersection has been assumed to be that reported for the similar Auburn Folsom Road / Race Track Road intersection (refer to Table 5.11-17).

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Under Alternative # 5 a new intersection would be created on Auburn Folsom Road roughly 750 feet south of Pacific Street. The extent to which this location would warrant a traffic signal is unknown. To evaluate the travel time along this alternative it has been assumed that a traffic signal is installed and that the average delay at this low volume location would also be similar to that at the Auburn Folsom Road / Race Track Road intersection.

It is important to note that the length of the average delay at Auburn Folsom Road intersections will vary over the course of the day. The length of the average delay at Auburn Folsom Road / Herdal Drive employed herein will occur during the highest traffic volume hours, but the length of delays occurring during off-peak periods will be less.

As shown, with build out of Plan Area 1 & 2 the total travel time during the p.m. peak hour along the original Herdal Drive-Auburn Folsom Road route to Pacific Street (159 seconds) is likely to be very similar to the time spent on Alternative 4 (150 seconds). The time spent using Route #5 is longer (176 seconds).

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TABLE 2
COMPARISON OF PHYSICAL CHARACTERISTICS OF ALTERNATIVE ROUTES

Segment	Street	Beginning	End	Length (feet)	Max. Grades	Min. Curve Radii	Travel Speed (mph)	Travel Time (sec)	Signal Loss Time (sec)	Total Time on Route (sec)
<i>Original route</i>										
A-B	Herdal Drive	BRSP	A F Road	2,700	<6%	500'	30	61	42	103
B-D	Auburn Folsom Road	Herdal Drive	#5	2,225	<6%	n.a.	50	30	-	30
D-C	Auburn Folsom Road	#5	#4	725	<6%	n.a.	50	10	16	26
	Total			5,650				101	58	159
<i>Alt # 4</i>										
A-C	Alternative #4	Herdal Drive	A-F Road	4,900	15%	200'	25	134	16	150
	Total			4,900				134	16	150
<i>Alt # 5</i>										
A-D	Alternative #5	Herdal Drive	A-F Road	4,900	15%	50'	25	134	16	150
D-C	Auburn Folsom Road	#5	#4	725	<6%		50	10	16	26
	Total			5,625				144	32	176

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Share of BRSP Traffic on New Routes. Based on consideration of these factors, we expect that the travel patterns of some BRSP residents and commercial customers will change if either of the two new routes is available.

As shown in Table 3, because the travel times on the original route and on route #4 are similar, we expect that the BRSP trips with origin / destination north of the Auburn Folsom Road / Pacific Street intersection would be split 50%/50% between Herdal Drive and Alt # 4 during the p.m. peak hour. However, because the travel time on Alt # 5 is appreciably longer, the split for northbound traffic between Herdal Drive and Alt # 5 is 90% / 10%.

Some of the trips destined for locations east of Auburn Folsom Road that were originally assumed to use Sacramento Street may instead follow the alternative routes and use Pacific Street. However, the time needed just to reach Auburn Folsom Road is much longer under the alternative routes, and they are not likely to attract many of these trips. The split of this eastbound traffic is assumed to be 85% Herdal Drive / 10% Alt #4 and 90% Herdal Drive / 10% Alt # 5.

<p align="center">TABLE 3 BRSP REGIONAL TRIP DISTRIBUTION</p>				
Direction	Route	Original DEIR Analysis	With Alt #4	With Alt # 5
East on Sacramento Street	Herdal Dr to Auburn Folsom Rd	16.5%	14.0%	15.0%
	Alt # 4 to Pacific Street	0.0%	2.5%	0.0%
	Alt # 5 to Pacific Street	0.0%	0.0%	1.5%
North to I-80 (e), SR 49 and Auburn	Herdal Dr to Auburn Folsom Rd	13.7%	6.9%	12.2%
	Alt # 4 to Auburn Folsom Road	0.0%	6.9%	0.0%
	Alt # 5 to Auburn Folsom Road	0.0%	0.0%	1.5%
South / West	Herdal Dr to Auburn Folsom Rd	49.0%	49.0%	49.0%
Total on Herdal Drive		79.2%	69.8%	76.2%
Total on Alt # 4		0.0%	9.4%	0.0%
Total on Alt #5		0.0%	0.0%	3.0%

Results. Table 3 compares the share of total BRSP traffic (Area 1 & Area 2) on Herdal Drive and on the two alternative routes.

Under the Original DEIR traffic analysis, when the BRSP is fully built out Herdal Drive was projected to carry 79.2% of the external p.m. peak hour traffic generated by the Specific Plan.

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If the Alt # 4 route to Pacific Street is added, the new route would be expected to attract 9% to 10% of the total site traffic, with the share on Herdal Drive dropping to less than 70%.

However, if the Alternative #5 route is added instead, it would attract roughly 3% of the total site traffic.

Please feel free to contact me if you have any questions or need additional information.

Sincerely,

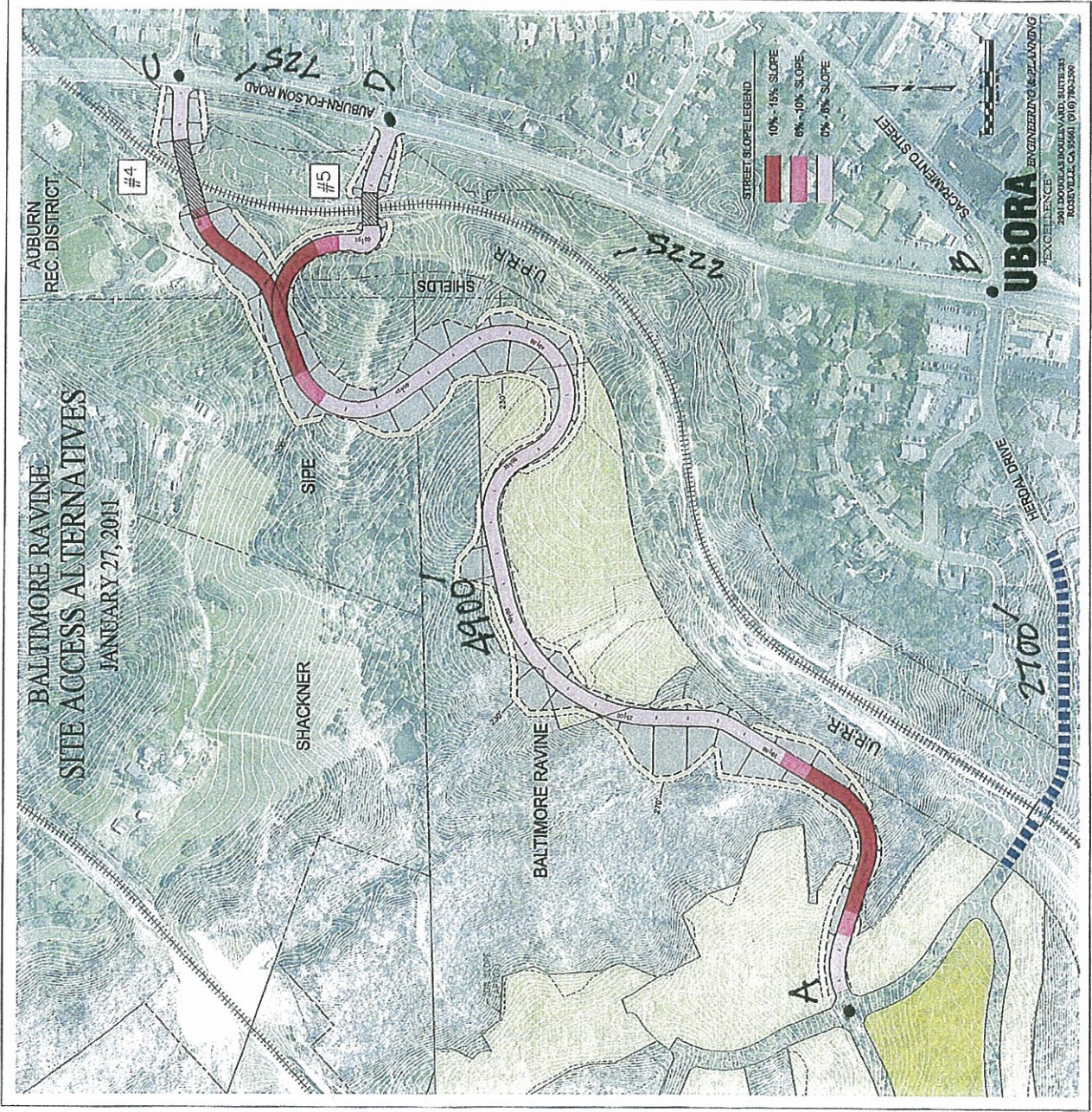
KD Anderson & Associates, LLC

A handwritten signature in black ink, appearing to read 'K. Anderson', with a long horizontal flourish extending to the right.

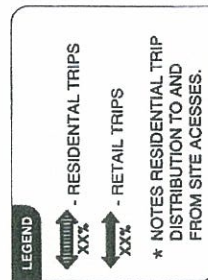
Kenneth D. Anderson, P.E.
President

Attachments: Site Access alternatives map, Fig 5.11-6b, 13, 14

KDA



BRSP ACCESS ALTS - DISTANCE

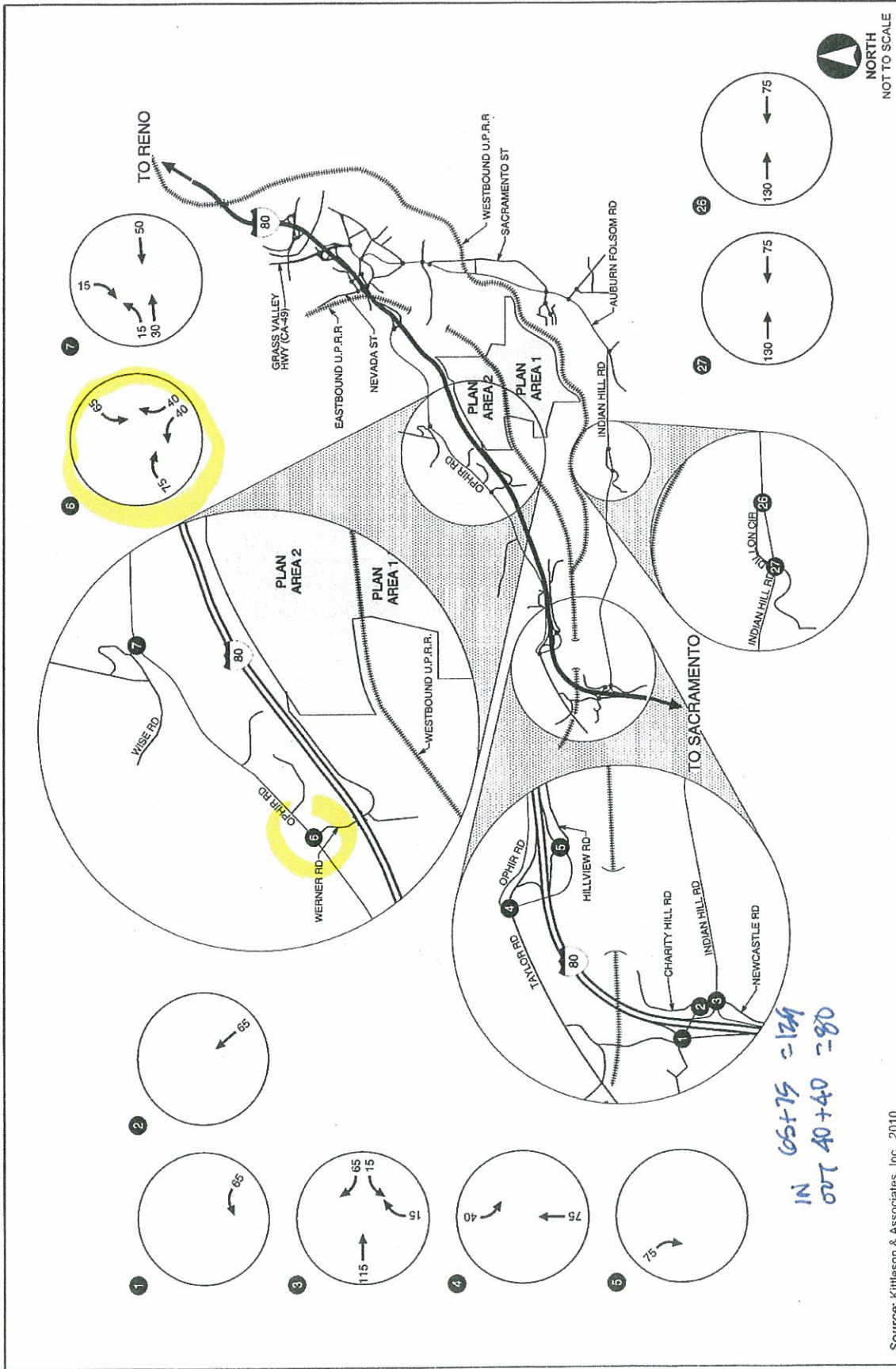


Source: Kittleson & Associates, Inc., 2010.

FIGURE S.11-6b
Residential and Retail Trip Distribution Patterns - Plan Areas 1 and 2

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Baltimore Ravine Specific Plan and Study Areas



Source: Kittleson & Associates, Inc., 2010.

FIGURE 5.11-13

West Study Intersections Site Generated Trips - Plan Areas 1 and 2 - Weekday PM Peak Hour



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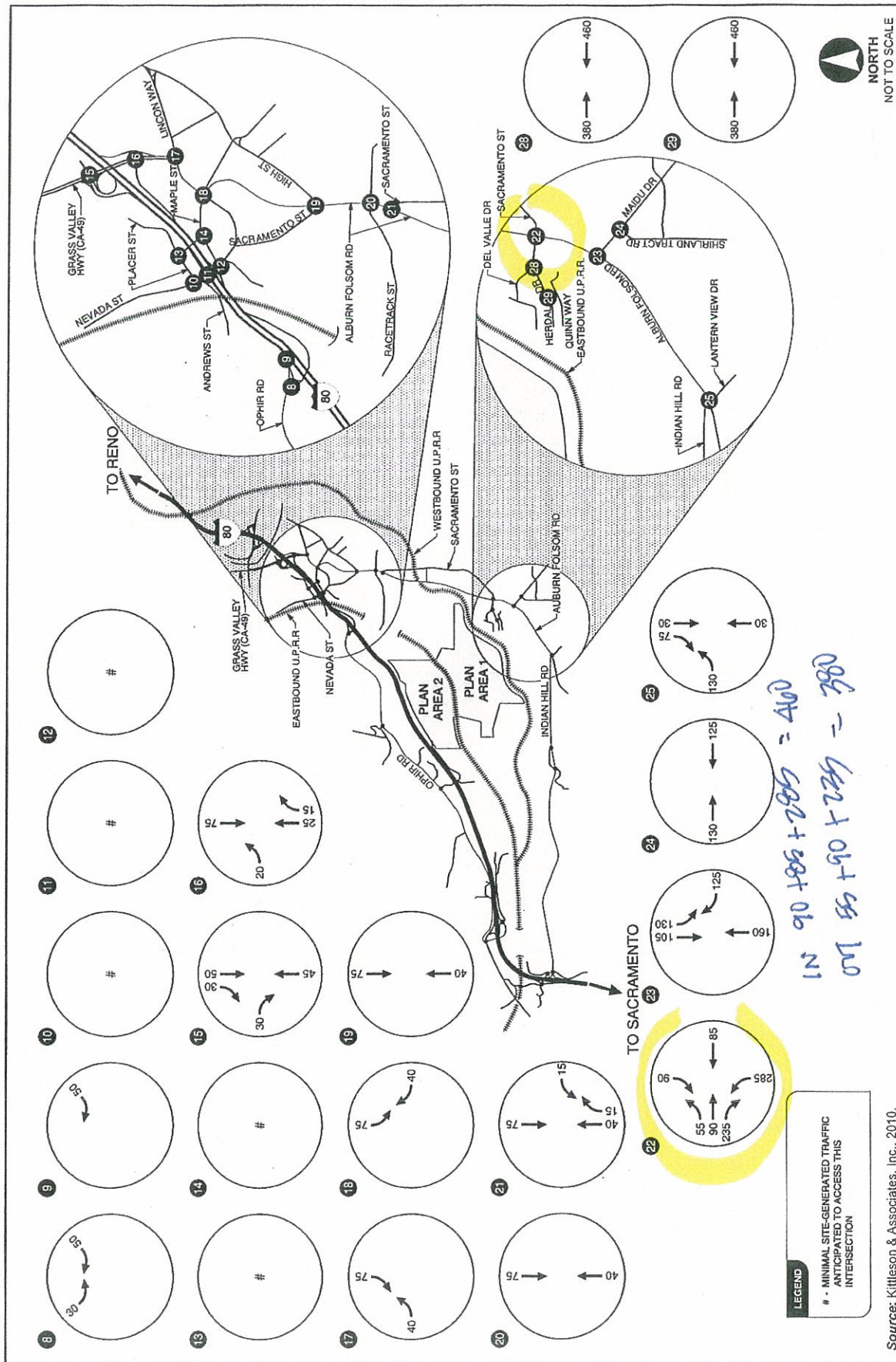


FIGURE 5.11-14

East Study Intersections Site Generated Trips - Plan Areas 1 and 2 - Weekday PM Peak Hour

Source: Kittleson & Associates, Inc., 2010.



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Baltimore Ravine Specific Plan and Study Areas

Σ IN 460 + 135 = 595 ~ 1050 N 1000 page 5.11-20
Σ OUT 380 + 280 = 660